

EVENT FLASH

Juniper Announces the T1600: A Service-Aware Core Router for Next-Generation Networks

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IN THIS EVENT FLASH

This IDC Flash discusses Juniper Networks' announcement of the T1600, the industry's highest-capacity service-aware core router. The T1600 is a new core router that includes policy-based service-aware intelligence to help service providers deliver premium and guaranteed services to their customers.

SITUATION OVERVIEW

Juniper has introduced a new form of core router to its T-series family with the T1600. At 1.6Tbps throughput in half a rack, it supports 100G per slot; this is the highest-density core router ever delivered, offering an easy upgrade to 40G as well as 100G. And while Juniper has scaled in capacity, it has also reduced the size and power consumption, key metrics providers are looking for.

Juniper has also enabled current T640 customers to upgrade their T640 to a T1600 and use the same interfaces without disrupting service. There are multiple upgrade options; from a TX matrix chassis that has been installed with T640s or a single T640, upgrade is also possible to T1600, or the customer can simply start off with a T1600 in the network.

But this introduction isn't all about scaling, performance, and ease of migration. Juniper has also supplied a new service richness and control at the core, previously delivered in multiple platforms from multiple vendors. While scale and capacity are important in the core, providers are looking to ensure that nondisruptive business policies are applied in order to enhance their revenue potential. What Juniper is doing here is basically bridging the packet layer with the service and application layer by applying dynamic policy and control mechanisms to improve resource utilization. So why is this necessary? For one, the core has traditionally been overprovisioned: Allocating enough bandwidth to any service or application was the solution. This was also a work-around for the fact that quality of service (QoS) and customized QoS have rarely been applied for specific parameters on an application level. Previous implementations have been static with no intelligent understanding of the applications. With this policy and service awareness, the T1600 as well as other Juniper routers that use the Session and Resource Control (SRC) Portfolio can understand if the application is best effort or if it is assigned a priority and can then push that priority all the way down to the user or consumer.

Support for granular QoS on an application level drives the tight integration of session and resource control over the entire network (from user all the way to the core). What this means is that if a user wants to download a "long tail" video, the routers check if the network resources and/or bandwidth is available to do the download. This enables the network infrastructure to make sure it's in line with the business policies when the user requests a specific application like a video-on-demand (VoD) download. It also, cleverly, enables the service provider to tell users that they need more bandwidth to download that video, and if they do, would they like to purchase an upgrade to their service? This is just one example of how Juniper continues to help service providers make new revenue off existing customers as the applications and services change.

IDC expects that with the new video distribution infrastructure being deployed today, most VoD servers will start off with a centralized approach in order to save on servers and storage. Over time, the VoD market will become decentralized in nature; popular content will be stored and distributed locally, and long-tail content will continue to be centralized. With the dynamic nature of these traffic patterns and the migration of the traffic, being able to identify the bandwidth and adjust it on a single service path across the network is extremely important. Network resource management is not frequently discussed in public but happens to be the single most important problem cable operators are dealing with today. Why the cable operators? Because cable networks are where the largest number of video streams are being downloaded today. Understanding a video download and the network resources that are available to deal with that download is key to delivering next-generation applications and services to cable operators as well as all the major telecom providers.

This improved efficiency and increased service velocity allows long-tail content and new trial applications to remain centralized and ensures that the content can be safely delivered across the network so the end user has no idea how far it came or how difficult it was to deliver. And while policies have existed for typical services such as data and voice, new P2P and VoD downloads shift this market demand to more end-to-end needs, for which integration for highly tuned and cohesive performance of a specific service application is required.

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FUTURE OUTLOOK

IDC believes the new T1600 platform Juniper is introducing hits a major sweet spot for network providers. Not only is the core router capacity being tested these days, QoS capabilities must be enabled for new services that do not handle latency and jitter in the networks. With the consistent JUNOS operating system and the reuse of low-density and high-density modules, the product provides insurance for many years to come. Upgrade paths are well defined, so providers have multiple options for installing the T1600. IDC also commends Juniper for taking the 40G versus 100G controversy head-on by providing a 100G-capable switch fabric; only the port type and standards can be debated because the capacity is inherent. This will also satisfy the datacenter players that are clamoring for higher bandwidth as well as the major tiered telco and cable providers. Hats off to Juniper for doing it again!